



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 5th Semester Examination, 2022

CC12-MICROBIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** questions: 1×5 = 5
 - (a) Define adjuvants.
 - (b) What do you mean by germinal centre?
 - (c) What is Myasthenia Gravis?
 - (d) What do you mean by extra vasation?
 - (e) What is haptен?
 - (f) What are Bence Jones protein?
 - (g) What are the product of papain digestion of immunoglobulins?
 - (h) What is Hinge region?

2. Answer any **three** questions: 5×3 = 15
 - (a) Explain the principle of HAT selection of Hybridomas. Mention the application of monoclonal antibodies. 3+2
 - (b) Describe the mechanism of oxygen-dependent and oxygen-independent mechanism of phagocytosis by macrophages. 5
 - (c) Describe the different types of functions and killing mechanisms of NK cells. 5
 - (d) Write a short note on Chediak-Higashi syndrome. 5
 - (e) Write a short note on a secondary immune organ. 5

3. Answer any **two** questions: 10×2 = 20
 - (a) Differentiate direct and indirect ELISA. Write the principle of immunofluorescence. 6+4
 - (b) Describe the mechanism of cytotoxic hypersensitivity with example. What is contact dermatitis? 8+2
 - (c) Briefly summarise different organ-specific auto-immune diseases. Describe various strategies for treating auto-immune diseases. 7+3
 - (d) With proper diagram describe the structure and function of MHC I and MHC II. Define inflammation. What are the cardinal signs of inflammation? 7+1+2

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